



TrellisWare
TECHNOLOGIES

TrellisWare Product Catalog

TSM Shadow Radios

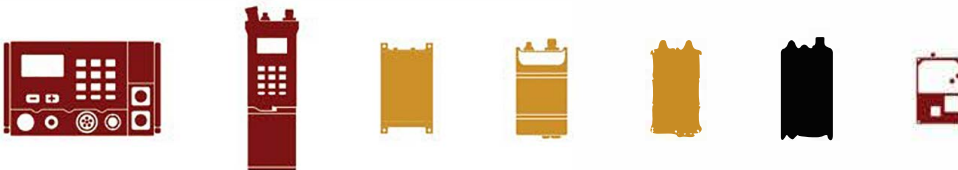
- TW-135 TSM Shadow High Power Radio (HPR)
- TW-950 TSM Shadow Radio
- TW-900 TSM Shadow Radio
- TW-650 TSM Shadow Module

TSM Ghost Radios

- TW-880 TSM Ghost Embedded Module
- TW-875 TSM Ghost Radio
- TW-870 TSM Ghost Radio

TSM Spirit Radios

- TW-860 TSM Spirit Radio



J O I N T H E  —————
T R E L L I S // S P H E R E

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About TrellisWare

TrellisWare Technologies, Inc. was founded by four innovators in the areas of signal processing and advanced communications. In the year 2000, the co-founders decided to pursue terrestrial applications of technology that combined foundations in signal processing innovation, with the ability to productize these ideas for the real-world in the commercial sector. We are now a worldwide leader in highly advanced algorithms, waveforms, and communications systems that range from small form factor radio products to fully integrated solutions.

Today, TrellisWare's technology is a critical component of modern tactical networks. Our TSM waveform is incorporated into a wide range of systems, including TrellisWare radios, trusted industry partner radios, and multiple government and commercial solutions. Our highly adaptable network facilitates mission critical voice and data delivery in the most severe conditions.

TrellisWare is leading innovative development programs covering a wide range of technologies that aim to meet emerging customer mission requirements. These include Audio Data Port (ADP), Data Power Port (DPP), Dynamic Spectrum Allocation (DSA), Free Space Optics (FSO), Headset Audio Port (HAP), High Frequency (HF) radio, Troposcatter, Interference Mitigation, Multi-Functional Connector (MFC), and On-The-Go (OTG) to name a few.

TrellisWare is a trademark of TrellisWare Technologies, Inc.





TrellisWare TSM Waveform

TrellisWare Technologies is the industry leader in the development and deployment of Mobile Ad Hoc Networks (MANET). TrellisWare's TSM waveform is a highly scalable and robust MANET waveform that was designed from the ground up to support over 800 nodes with simultaneous voice, data, video, and Position Location Information (PLI) operating in a single radio frequency channel. As a Technology Readiness Level (TRL) 9 technology, the TSM waveform is used worldwide in highly challenging tactical environments, supporting military, commercial, and public safety missions.

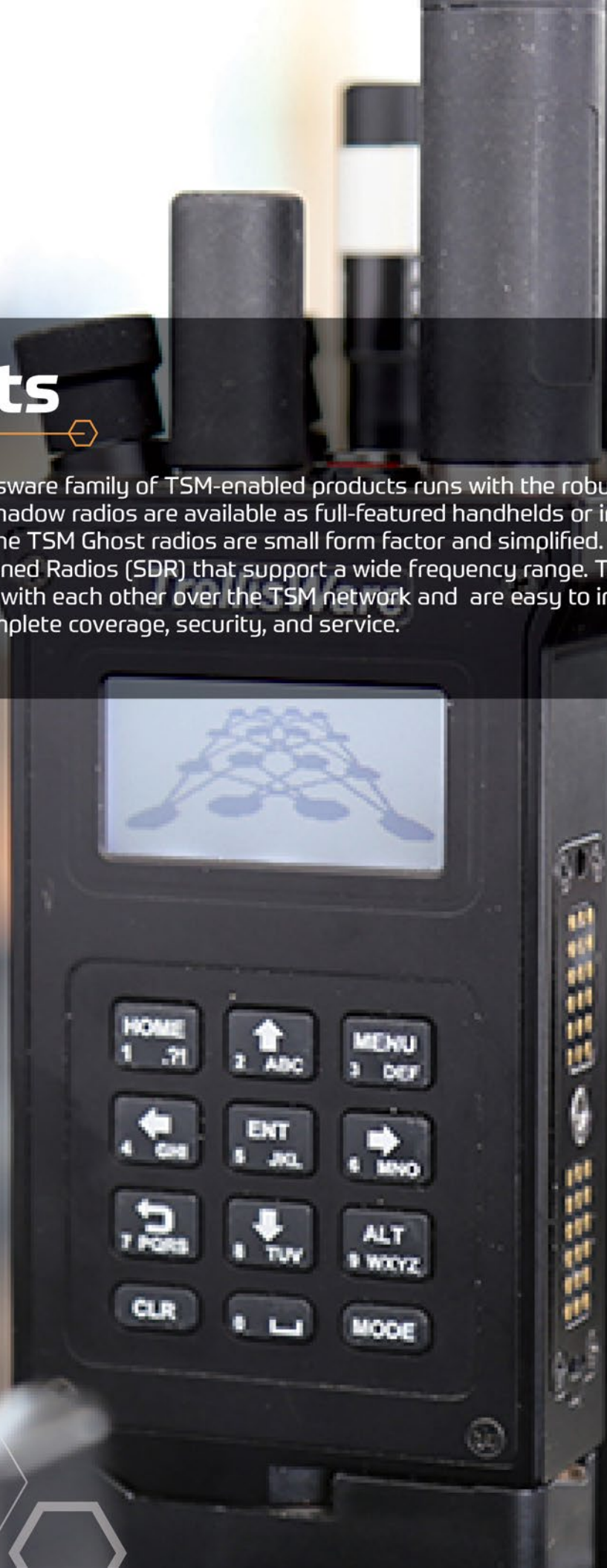
Unlike many competing commercial MANET solutions that overlay Internet-driven routing protocols over commercial technologies such as Wi-Fi (802.11n), TSM is a true Software Defined Radio (SDR) waveform that includes all network layers, and is offered in different variants to support various mission profiles. It has been ported to many partners' SDR products, including eight program of record tactical radios for the US military.

The TSM waveform offers robust, reliable communications with simplified network management, and has been validated in real, critical missions with diverse use cases ranging from Intelligence, Surveillance & Reconnaissance (ISR) to Command & Control (C2) applications in some of the most challenging environments.

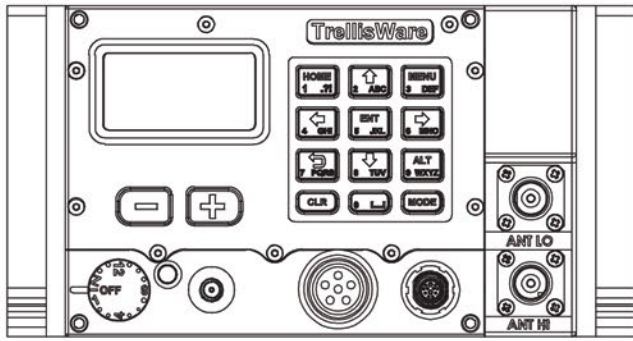


Products

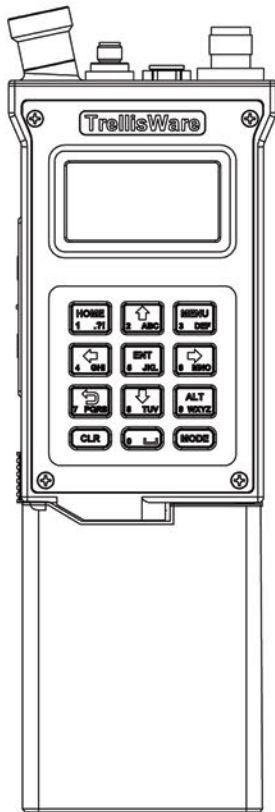
Each radio in the Trellisware family of TSM-enabled products runs with the robust TSM waveform. The TSM Shadow radios are available as full-featured handhelds or in vehicular configurations, while the TSM Ghost radios are small form factor and simplified. Both product lines are Software Defined Radios (SDR) that support a wide frequency range. TSM-enabled products interoperate with each other over the TSM network and are easy to integrate into larger systems for complete coverage, security, and service.



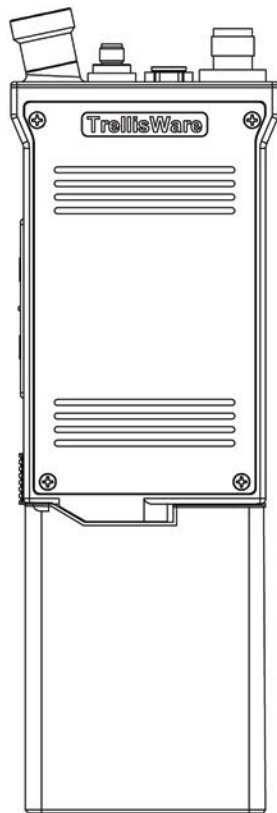
TSM Shadow Product Line



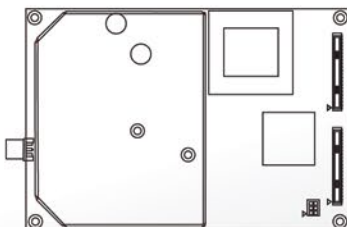
**TW-135
TSM Shadow HPR**



**TW-950
TSM Shadow Radio**

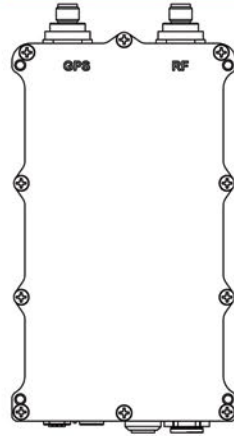


**TW-900
TSM Shadow Radio**

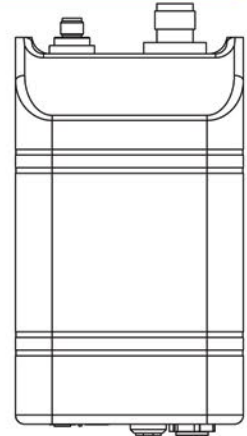


**TW-650
TSM Shadow Module**

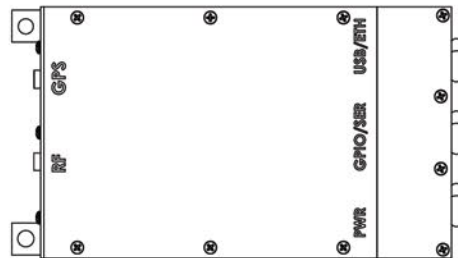
TSM Ghost Product Line



**TW-870
TSM Ghost Radio**



**TW-875
TSM Ghost Radio**



**TW-880
TSM Ghost Embedded
Module**

TSM Spirit Product



**TW-860
TSM Spirit Radio**

TW-135 TSM Shadow High Power Radio (HPR)



Highlights

- Contains all of the features of the TW-950 radio
- Delivers 20 Watts of transmit power in UHF, L-band, and S-band to extend and strengthen MANET networks
- Versatile form factor that supports vehicular, airborne, fixed-site, or manpack configurations
- Shares common accessories with the TW-900/950 handheld radio to maximize flexibility and save life cycle cost

SPECIFICATIONS

Size (R/T Only)	3.40 H x 5.25 W x 7.26 D in (88.36 x 133.35 x 184.40 mm)
(Without Handles)	7.98 L x 5.25 W x 3.40 H in (202.69 x 133.35 x 184.40 mm)
Weight (R/T only)	6.4 lbs (2.90 kg)
Frequency Range	LUHF: 225–450 MHz U-UHF: 698–970 MHz L/S Bands: 1250–2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20, 40 MHz
Transmit Power	100mW, 2W, 5W, 10W, 20W
Operating Temperature	-20°C to +55°C (-4°F to +131°F)
Environmental	MIL-STD-810G
Water Resistant	IP67
Connectors	ODU Data/Audio, 6-Pin Audio, TNC RF, SMA GPS, 36-pin top connector
IP Support	IPv4, IPv6; Unicast, Multicast, Broadcast; TCP, UDP
Audio Encoding	AMR 5.9, MELPe, AAC Audio
Video Encoding	SD and HD H.264
Waveform	TSM Release 6

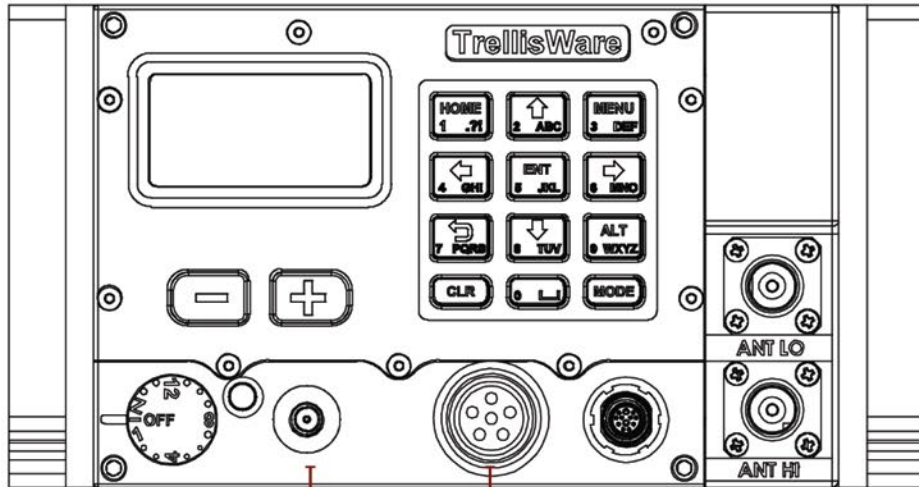


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TW-950 TSM Shadow Radio



Highlights

- Industry-leading size, weight, and power (SWaP) among tactical networking radios
- Supports simultaneous voice talk-groups, rapid PLI reporting, Internet Protocol (IP) data and video streaming all in a compact form factor
- Built-in Multi-Net Bridge (MNB) capability
- Accessory offering enables a wide range of use cases with multiple power options, data interfaces, and audio ancillaries

SPECIFICATIONS

Size (R/T Only)	4.54 H x 2.76 W x 0.87 D in (115.31 x 70.10 x 22.09 mm)
Weight (R/T only)	11.3 oz (0.32 kg)
Frequency Range	LUHF: 225–450 MHz U-UHF: 698–970 MHz L/S-bands: 1250–2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20, 40 MHz
Transmit Power	100mW, 250mW, 500mW, 1W, 2W
Battery Life	8 Hours with TW-1450 - 32 Wh Rechargeable Battery
Environmental	MIL-STD-810G
Operating Temperature	-20°C to +55°C (-4°F to +131°F)
Water Resistant	IP68
Connectors	ODU Data/Audio, TNC RF, SMA GPS, 36-Pin Side Connector
Data Rate	Pt. to Pt., up to 32 Mbps (1-hop)
IP Support	IPv4, IPv6; Unicast, Multicast, Broadcast; TCP, UDP
Audio Encoding	AMR 5.9, MELPe, AAC Audio
Video Encoding	SD and HD H.264
Waveform	TSM Release 6

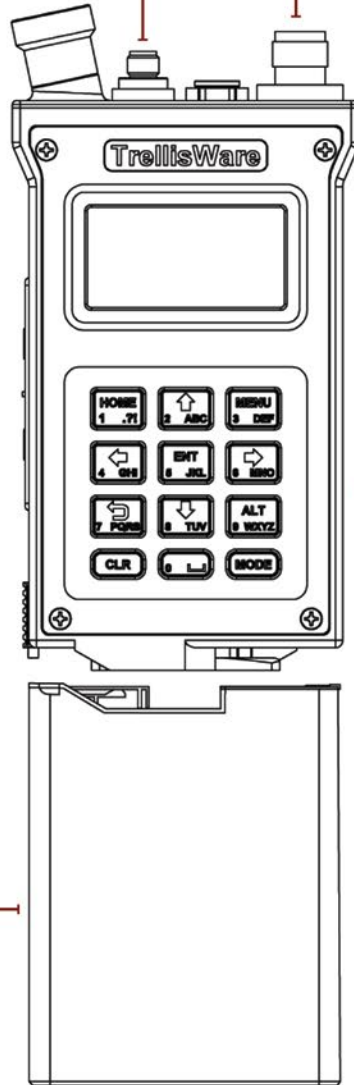


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TW-900 TSM Shadow Radio



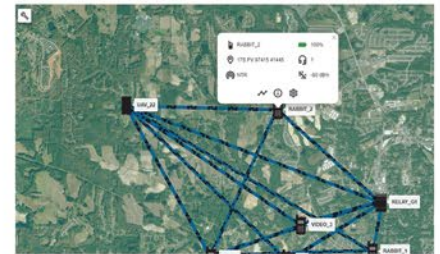
Highlights

- Industry-leading size, weight, and power (SWaP) among tactical networking radios
- Supports simultaneous voice talk-groups, rapid PLI reporting, Internet Protocol (IP) data and video streaming all in a compact form factor
- Built-in Multi-Net Bridge (MNB) capability
- Accessory offering enables a wide range of use cases with multiple power options, data interfaces, and audio ancillaries

SPECIFICATIONS

Size (R/T Only)	4.54 H x 2.76 W x 0.87 D in (115.31 x 70.10 x 22.09 mm)
Weight (R/T only)	11.3 oz (0.32 kg)
Frequency Range	LUHF: 225–450 MHz U-UHF: 698–970 MHz L/S-bands: 1250–2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20, 40 MHz
Transmit Power	100mW, 250mW, 500mW, 1W, 2W
Battery Life	8 Hours with TW-1450 - 32 Wh Rechargeable Battery
Environmental	MIL-STD-810G
Operating Temperature	-20°C to +55°C (-4°F to +131°F)
Water Resistant	IP68
Connectors	ODU Data/Audio, TNC RF, SMA GPS, 36-Pin Side Connector
Data Rate	Pt. to Pt., up to 32 Mbps (1-hop)
IP Support	IPv4, IPv6; Unicast, Multicast, Broadcast; TCP, UDP
Audio Encoding	AMR 5.9, MELPe, AAC Audio
Video Encoding	SD and HD H.264
Net Entry Time	< 1 Second
Waveform	TSM Release 6

Note: Product model TW-900 provides TSM Shadow capabilities without the front panel screen or keypad

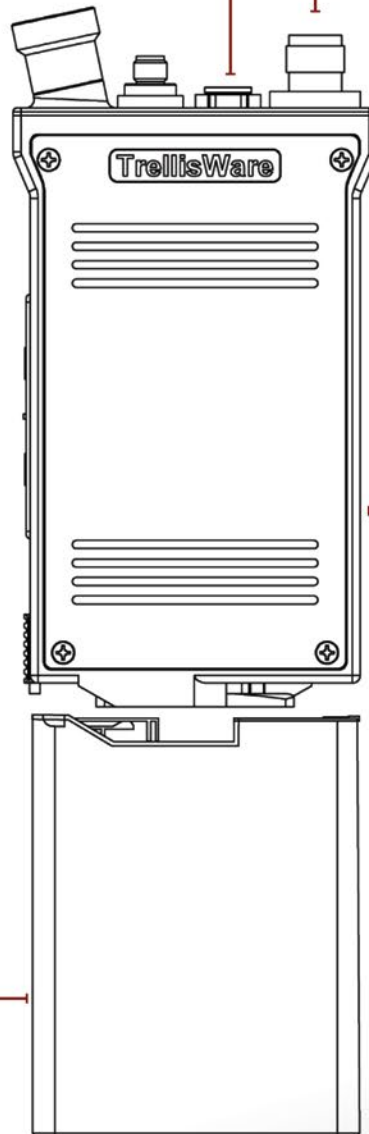


Audio/Data Adapters

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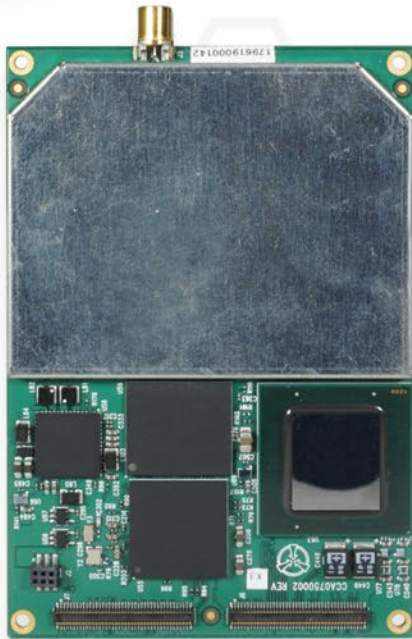
Antennas

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- TW-1150** - LUHF Antenna pg. 31
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- TW-1725** - HD Video Dongle pg. 35
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TW-650 TSM Shadow Core Board Module



Highlights

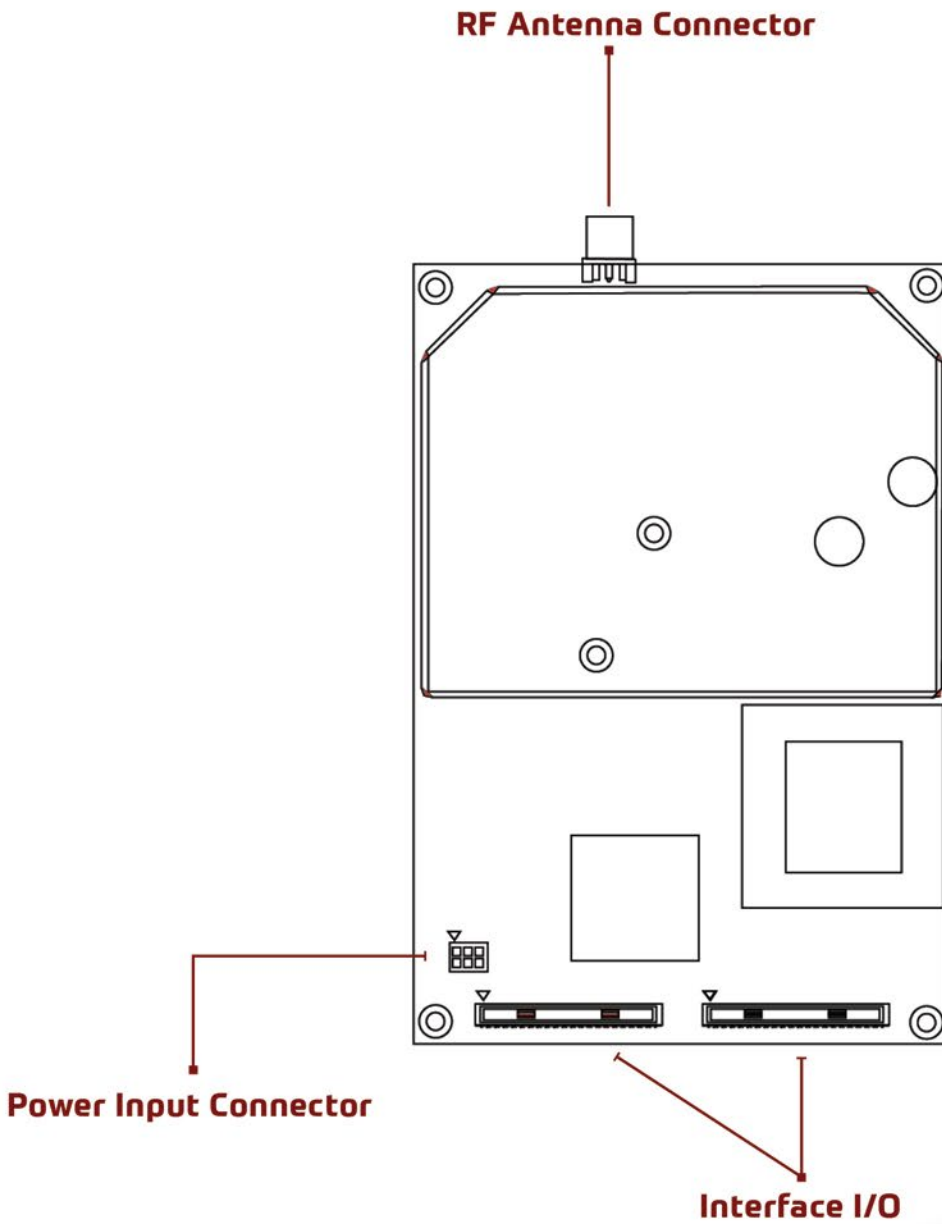
- Advanced SOR architecture designed for embedment into a wide range of systems
- Designed for optimal SWaP allowing for embedment into small to large platforms
- Full software application programming interface (API) for status and control of the radio through an IP interface

SPECIFICATIONS

Size	2.92 L x 2.0 W x 0.11 H in (74.17 x 50.80 x 2.79 mm)
Weight	1.2 oz (34.09 g) (core board with shielding)
Frequency Range	LUHF: 225–450 MHz U-UHF: 698–970 MHz L/S Bands: 1250–2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20, 40 MHz
Transmit Power	0.1–2W
Input Power	3.0–4.0 VDC, 9.8 W max
Security	Built-in AES-256 COMSEC and TRANSEC
Connectors	Board Mount, Power and Control, PTT Audio, USB 2.0 Ports (USB-OTG, USB-H1), Serial UARTs, I2C, RF Antenna (SMP Jack), GPS
Data Rate	Pt. to Pt., Up to 32 Mbps (1-hop)
IP Support	IPv4, IPv6; Unicast, Multicast, Broadcast; TCP, UDP
Audio Encoding	AMR 5.9, MELPe
Video Encoding	H.264, HDMI, NTSC, PAL, MJPEG
Waveform	TSM Release 6



Components



TW-880 TSM Ghost Embedded Module

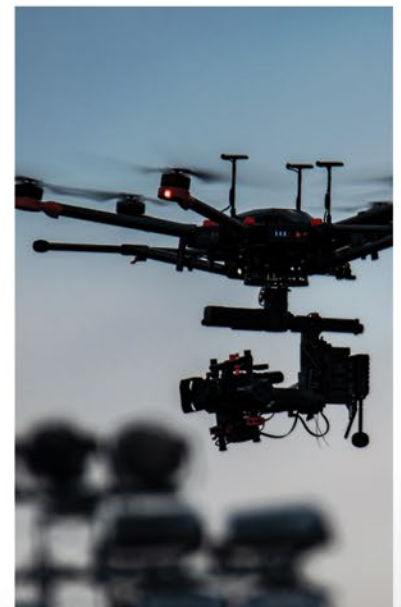


Highlights

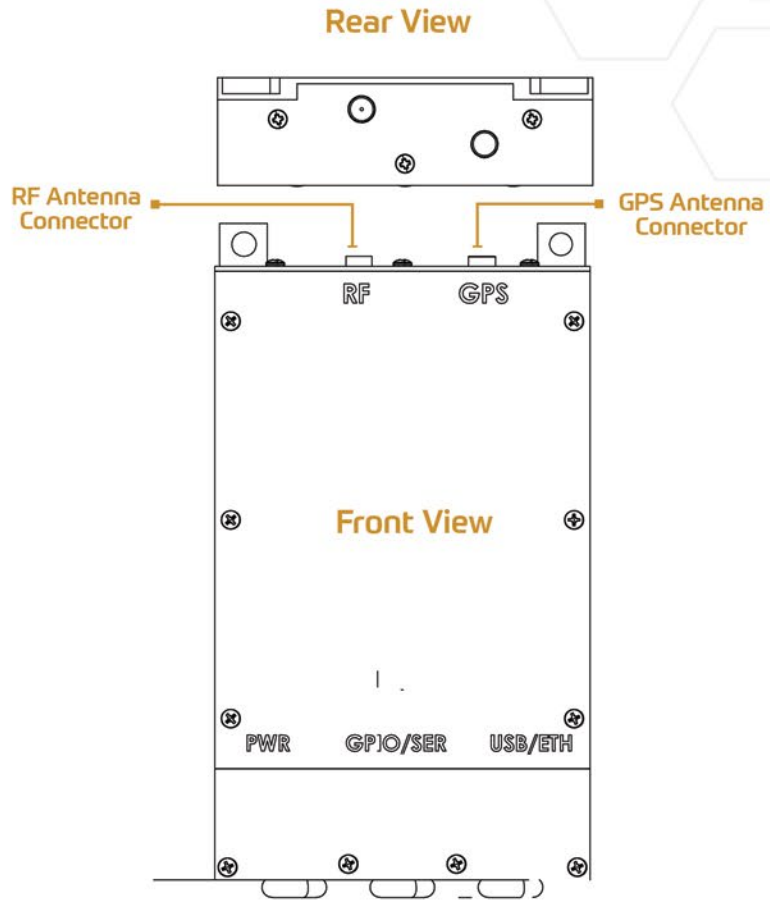
- Smallest, lightest, and most capable product for plug and play integration of the TSM waveform
- Requires minimal integration effort
- Includes Ethernet, Serial, and USB data interfaces
- Supports operation across the 225-450 MHz, 698-970 MHz, and 1250-2600 MHz frequency bands

SPECIFICATIONS

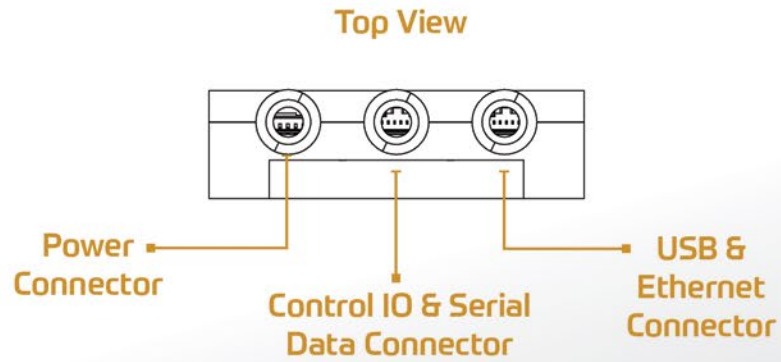
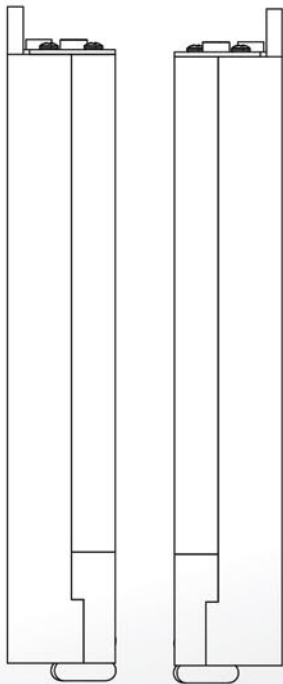
Size	4.12 H x 2.30 W x 0.68 D in (104.7 x 58.4 x 17.2 mm)
Weight	4.64 oz (132 g)
Frequency Range	LUHF: 225 – 50 MHz U-UHF: 698 – 970 MHz L/S Bands: 1250 – 2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20, 40 MHz
Transmit Power	100 mW, 250 mW, 500 mW, 1 W, 2 W
Input Power	8 to 20 VDC
Environmental	MIL-STD-810G Shock & Vibration
Ingress Protection	IP41
Operating Temperature Range	-20°C to +55°C (-4°F to +131°F)
Interfaces	USB On-the-Go, Ethernet, Control Status, Serial Data, RF SMP, GPS SMA
Data Rate	Pt. to Pt., up to 32 Mbps (1-hop)
Waveform	TSM 6



Components



Left View



Right View

TW-875 TSM Ghost Radio



Highlights

- Ideal for network relay when a full-featured radio is not required
- Provides USB On The Go (OTG) data interface for IP data, configuration, and network monitoring
- Shares common antennas and cabling with the TW-900/950 handheld radio to maximize flexibility and save life cycle cost

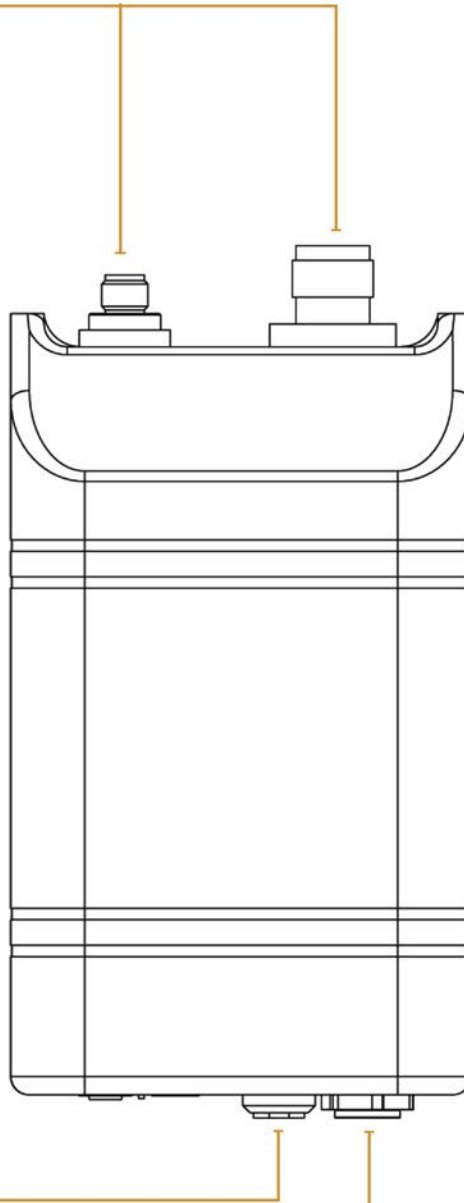
SPECIFICATIONS

Size	4.06 H x 2.50 W x 1.46 D in (103.12 x 63.50 x 37.08 mm)
Weight (R/T only)	16 oz (0.45 kg)
Frequency Range	LUHF: 225–450 MHz U-UHF: 698–970 MHz L/S Bands: 1250–2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20, 40 MHz
Transmit Power	100mW, 250mW, 500mW, 1W, 2W
Input Power	5 V to 20 V
Environmental	MIL-STD-810G
Water Resistance	IP68
Operating Temperature	-20°C to +55°C (-4°F to +131°F)
Connectors	USB On-the-Go, RF TNC, GPS SMA
Data Rate	Pt. to Pt., up to 32 Mbps (1-hop)
Waveform	TSM 6



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TW-870 TSM Ghost Radio

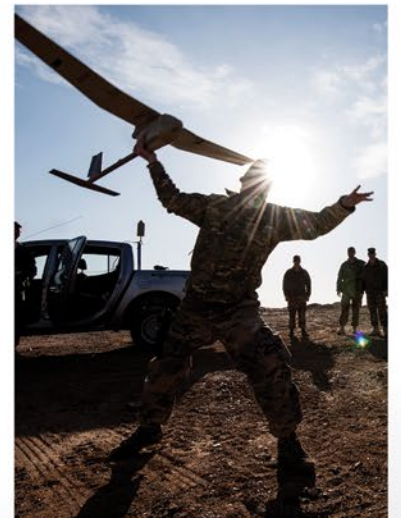


Highlights

- Fully integrated, self-contained radio module for integration into third-party systems with minimal engineering effort Fully capable TSM 6 data radio
- Accepts outside power, has GPS and RF antenna connectors, and a data interface
- Designed for quick integration into uncrewed systems and other platforms
- Cost effective option when mission set only requires relay for data transfer and/or network extension

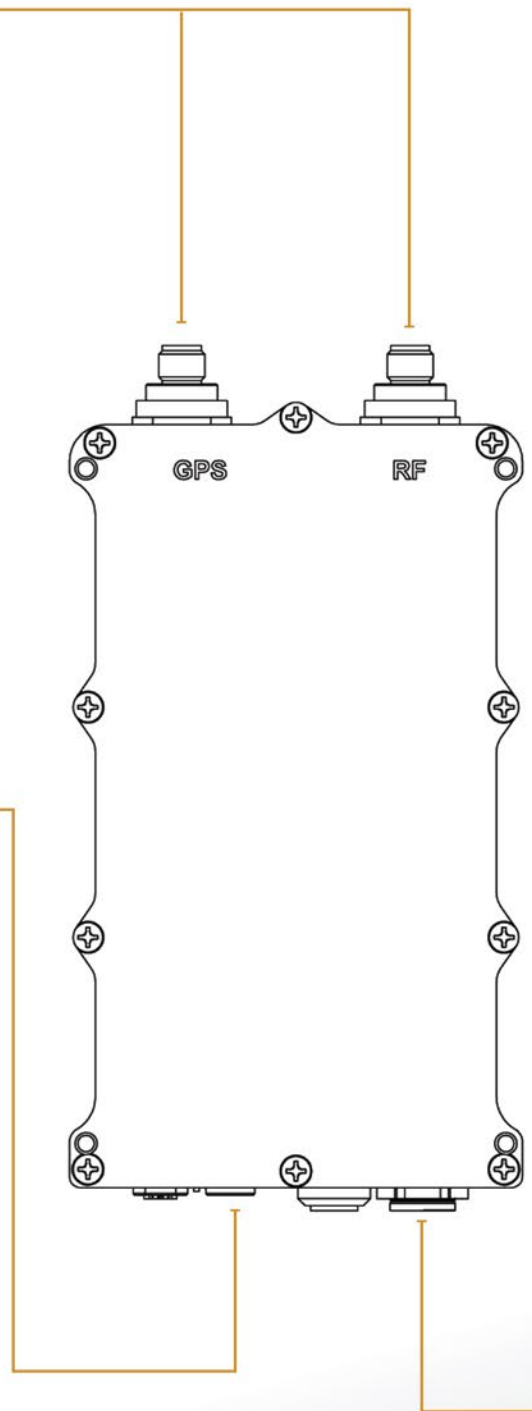
SPECIFICATIONS

Size	4.69 H x 2.46 W x 0.68 D in (119.12 x 62.48 x 17.27 mm)
Weight (R/T only)	8.8 oz (0.24 kg)
Frequency Range	LUHF: 225–450 MHz U-UHF: 698–970 MHz L/S Bands: 1250–2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20, 40 MHz
Transmit Power	100mW, 250mW, 500mW, 1W, 2W
Input Power	8-20VDC
Environmental	MIL-STD-810G
Water Resistance	IP68
Operating Temperature	-20°C to +55°C (-4°F to +131°F)
Connectors	USB On-the-Go, RF SMA, GPS SMA, 4-Pin ODU Power
Data Rate	Pt. to Pt., up to 32 Mbps (1-hop)
Waveform	TSM 6



Antennas

- TW-1110**
GPS Stub Antenna pg. 28
- TW-1115**
GPS Patch Antenna pg. 28
- TW-1135**
+2 dBi Dual-Band Antenna
pg. 28
- TW-1136**
Dual-Band Remote Antenna
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- TW-1137**
Dual-Band 1400/1800
Antenna pg. 29
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Power/Mount Adapters

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Power Cable pg. 37
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BA-5590 Power Cable pg. 38
- TW-1407**
Tajimi Binder Power Cable pg. 38
- TW-1408**
Glenair Binder Power Cable pg. 38
- TW-1800**
Power Cable with Binder pg. 40
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Audio/Data Adapters

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- TW-1665**
Glenair USB Adapter pg. 46
- TW-1670**
USB Type-A Adapter pg. 46

TW-860 TSM Spirit Radio



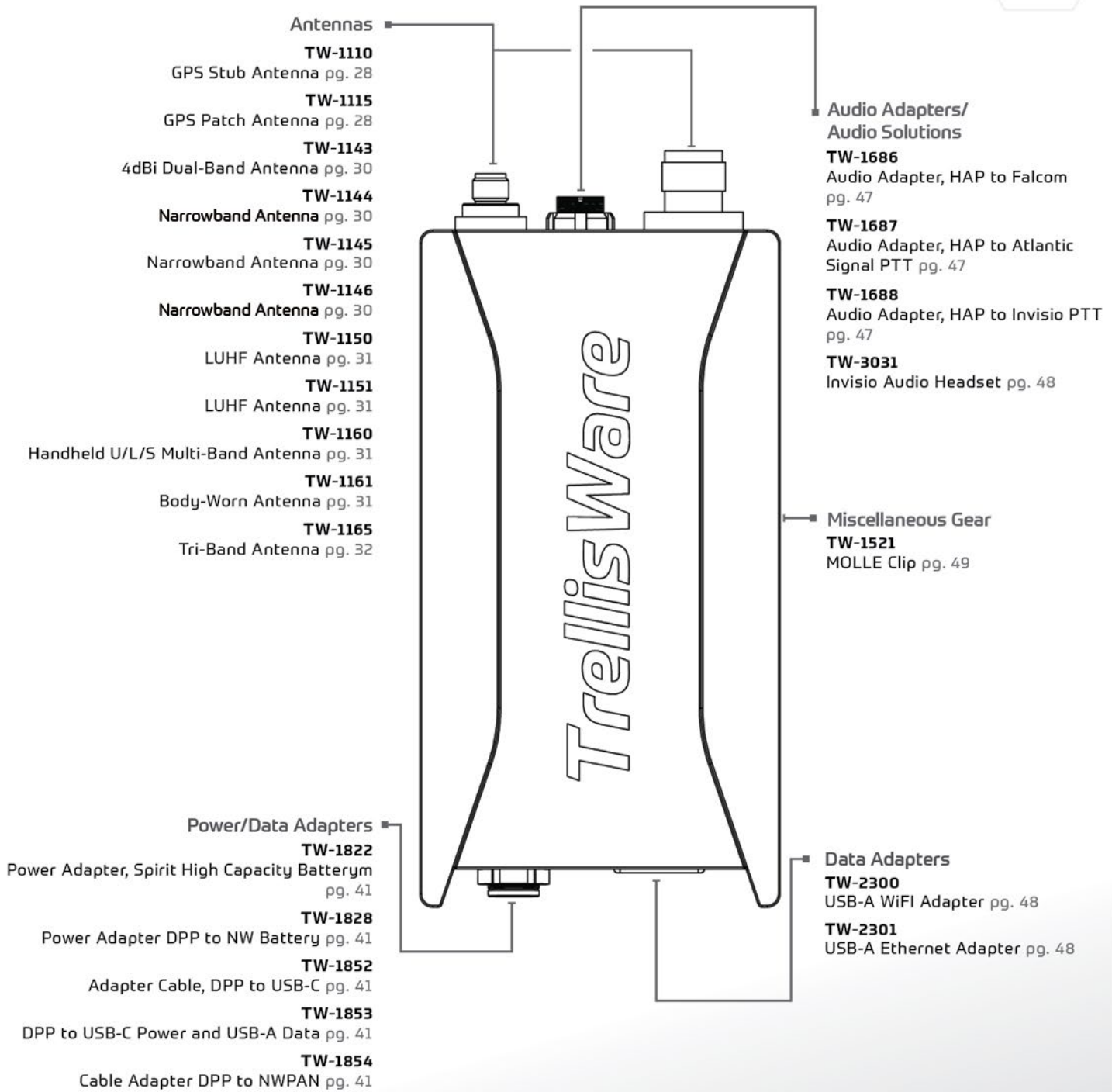
Highlights

- Designed specifically for body-wearable applications with industry-leading SWaP among body-worn mesh networking radios
- Seamless data connectivity for all body-worn end-user equipment
- Expansion port for Wi-Fi and Bluetooth wireless connectivity for audio and data
- Full TSM voice capability with dual push-to-talk (PTT) and up to 32 selectable talk groups

SPECIFICATIONS

Size	4.69 L x 2.50 W x 0.74 D in (119.38 x 63.50 x 18.79 mm)
Weight (R/T only)	8.81oz (0.25kg)
Frequency Range	LUHF: 225–450 MHz U-UHF: 698–970 MHz L/S Bands: 1250–2600 MHz
Configurable Bandwidth	1.2, 3.6, 10, 20, 40 MHz
Transmit Power	100mW, 250mW, 500mW, 1W, 2W
Operating Temperature	-20°C to +55°C (-4°F to +131°F)
Environmental	MIL-STD-810H
Water Resistant	IP67 without USB-A cap, IP68 with USB-A cap
RF Connector	TNC
Commercial GPS Connector	SMA connector, U-Box EVA--7M Module
Audio Connector	9-Pin Connector – Supports Dual Push-To-Talk (PTT) and Two Simultaneous Talkgroups
Power/Data Connector	12-Pin ODU Connector – Supports USB-C Power Delivery and Data
Expansion Connector	USB-A Connector – Supports Data, Programming, and Accessories
Power Input	5 V to 20 V, 3A max
Data Rate	Pt. to Pt., up to 32 Mbps (1-hop)
Waveform	TSM 6









Accessories



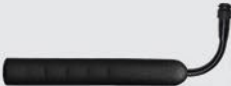



Customize TSM radios to meet the needs of the network and mission with a full range of hardware accessories












TSM Accessories

Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Antennas				
	TW-1110 GPS Stub Antenna	<ul style="list-style-type: none"> GPS Stub antenna with a low profile immersion sealed design for GPS reception in disadvantaged areas Designed for operation with an unpowered SMA port 	<p>Weight: 0.5 oz</p> <p>Size: 1.24" x 0.59"</p> <p>Connector: SMA</p> <p>GPS L1 Band: 1575.42 MHz</p>	<p>TW-135 TSM Shadow HPR</p> <p>TW-900/950 TSM Shadow</p> <p>TW-870/875 TSM Ghost</p> <p>TW-860 TSM Spirit</p>
	TW-1115 GPS Patch Antenna	<ul style="list-style-type: none"> GPS Patch antenna with 10' cable and a magnetic back, allowing for remote use of a GPS receiver where the GPS signal may be stronger Designed for operation with a powered SMA port 	<p>Weight: 2.7 oz</p> <p>Size: 1.44" x 0.5" x 0.177"</p> <p>Cable Length: 10'</p> <p>Connector: SMA</p>	<p>TW-135 TSM Shadow HPR</p> <p>TW-900/950 TSM Shadow</p> <p>TW-870/875 TSM Ghost</p> <p>TW-860 TSM Spirit</p>
	TW-1135 +2 dBi Dual-Band Antenna	<ul style="list-style-type: none"> Includes a +2 dBi gain and is terminated in SMA Gooseneck base can bend up to 90° 	<p>Weight: 1 oz</p> <p>Size: 8.5" x 1.13" x 0.5"</p> <p>Connector: SMA</p> <p>Band: 1755 - 1815 MHz, 2200 - 2270 MHz</p>	<p>TW-870 TSM Ghost</p>
	TW-1136 Dual-Band Remote Antenna	<ul style="list-style-type: none"> Rugged and covert antenna especially designed to reduce the signature when worn remotely on the operator's body Operates in 1800, 2200 MHz frequency bands Ships with SMA cable 	<p>Weight: 0.8 oz</p> <p>Size: 5.5" x 1.13"</p> <p>Connector: SMA</p> <p>Band: 1755 - 1815 MHz, 2200 - 2270 MHz</p>	<p>TW-870 TSM Ghost</p>





TSM Accessories				
Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Antennas				
	TW-1137 Dual-Band 1400 1800 RF Antenna	<ul style="list-style-type: none"> Ruggedized antenna for the TW-225 CheetahNet Mini radio Operates in the 1400 MHz and 1800 MHz frequency bands Has a +2 dBi gain and is terminated in SMA Gooseneck base can bend up to 90° 	<p>Weight: 1.25 oz</p> <p>Size: 9" x 1.5"</p> <p>Connector: SMA</p> <p>Band: 1410 - 1460 MHz, 1755 - 1815 MHz</p>	TW-870 TSM Ghost
	TW-1138 SMA +4 dBi Antenna	<ul style="list-style-type: none"> Rugged antenna operating in 1800 and 2200 MHz frequency bands Includes a +4 dBi gain +/- .5 Gooseneck base can bend up to 90° 	<p>Weight: 1.4 oz</p> <p>Size: 11.25"</p> <p>Connector: SMA</p> <p>Band: 1755 - 1815 MHz, 2200 - 2270 MHz</p>	TW-870 TSM Ghost
	TW-1140 1800/2200 ANTENNA	<ul style="list-style-type: none"> Has a +2 dBi gain Has a TNC connector to connect to the TW-1141 Magnetic Mount Antenna separation should be at a 4 ft minimum, with a preferred distance of 8 ft for wideband 	<p>Weight: 4.6 oz</p> <p>Size: 10.25" x 0.90" x 0.74"</p> <p>Connector: TNC</p> <p>Band: 1775-1815 MHz, 2200-2250 MHz</p>	
	TW-1141 Magnetic Mount	<ul style="list-style-type: none"> Magnetic antenna mount to hold antennas in a secure location Includes 3 meters of cable terminated with a male TNC connector 	<p>Weight: 4.6 or 9.2 oz (depending on cable length)</p> <p>Size: 3 Meters or 12'</p> <p>Connector: TNC</p>	<p>TW-135 TSM Shadow HPR</p> <p>TW-900/950 TSM Shadow</p> <p>TW-875 TSM Ghost</p> <p>TW-860 TSM Spirit</p>






TSM Accessories

Accessory	Catalog Number/ Name	Description	Specifications	Compatible Radio
Antennas				
	TW-1143 4dBi Dual-Band Antenna	<ul style="list-style-type: none"> Rugged antenna operating in 1800 and 2200 MHz frequency bands Includes a +4 dBi gain +/- .5 Gooseneck base can bend up to 90° 	<p>Weight: 1.4 oz</p> <p>Size: 12"</p> <p>Connector: TNC</p> <p>Band: 1755 - 1815 MHz, 2200 - 2270 MHz</p>	<p>TW-135 TSM Shadow HPR</p> <p>TW-900/950 TSM Shadow</p> <p>TW-875 TSM Ghost</p> <p>TW-860 TSM Spirit</p>
	TW-1144 Narrowband Antenna	<ul style="list-style-type: none"> Housed in a thick UV stable radome and constructed from corrosion-resistant material for reliability in the harshest environments, this gooseneck antenna has consistent gain across the band 	<p>Weight: 4.5 oz</p> <p>Size: 15.9"</p> <p>Connector: TNC</p> <p>Band: 1250 - 1450 MHz</p>	<p>TW-875 TSM Ghost</p> <p>TW-900/950 TSM Shadow</p> <p>TW-860 TSM Spirit</p>
	TW-1145 Narrowband Antenna	<ul style="list-style-type: none"> Housed in a thick UV stable radome and constructed from corrosion-resistant material for reliability in the harshest environments, this gooseneck antenna has consistent gain across the band 	<p>Weight: 4.0 oz</p> <p>Size: 13-1/8"</p> <p>Connector: TNC</p> <p>Band: 1750 - 1850 MHz</p>	<p>TW-875 TSM Ghost</p> <p>TW-900/950 TSM Shadow</p> <p>TW-860 TSM Spirit</p>
	TW-1146 Narrowband Antenna	<ul style="list-style-type: none"> Housed in a thick UV stable radome and constructed from corrosion-resistant material for reliability in the harshest environments, this gooseneck antenna has consistent gain across the band. 	<p>Weight: 3.7 oz</p> <p>Size: 12"</p> <p>Connector: TNC</p> <p>Band: 2200 - 2350 MHz</p>	<p>TW-875 TSM Ghost</p> <p>TW-900/950 TSM Shadow</p> <p>TW-860 TSM Spirit</p>

TSM Accessories				
Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Antennas				
	TW-1150 LUHF Antenna	<ul style="list-style-type: none"> Rugged antenna for UHF operations Operates between 225 - 450 MHz frequency bands TNC connector to connect to the TW-1141 Magnetic Mount 	Weight: 3 oz Size: 10" Connector: TNC Band: 225 - 450 MHz	TW-875 TSM Ghost TW-900/950 TSM Shadow TW-860 TSM Spirit
	TW-1151 LUHF Antenna	<ul style="list-style-type: none"> This rugged whip antenna achieves consistent gain across the LUHF band in a compact form 	Weight: 2 oz Size: 10.25" Connector: SMA Band: 225 - 450 MHz	TW-900/950 TSM Shadow TW-875 TSM Ghost TW-860 TSM Spirit
	TW-1152 LUHF Manpack Antenna	<ul style="list-style-type: none"> UHF 225 - 450 MHz Dipole design Designed for man-portable radios Rugged high quality antenna with a durable construction 	Weight: 9.52 oz Size: 22" Connector: TNC Female Band: 225 - 450 MHz	TW-135 TSM Shadow HPR
	TW-1160 Handheld U/L/S Multi-Band Antenna	<ul style="list-style-type: none"> Broadband dipole antenna designed for military manpack or commercial mounted applications Operates: 698 - 2600 MHz, U-UHF, and L/S bands 4.5" gooseneck base bends up to 90° 	Weight: 0.29 lbs Size: 11.37" Connector: TNC	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow TW-875 TSM Ghost TW-860 TSM Spirit
	TW-1161 Body-Worn Antenna	<ul style="list-style-type: none"> Broadband dipole antenna with 36" cable, designed for body worn applications Operates in 698 - 2600 MHz, upper UHF, and L/S bands 	Weight: 0.29 lb Size: 6" Connector: TNC	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow TW-875 TSM Ghost TW-860 TSM Spirit

TSM Accessories

Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Antennas				
	TW-1162 L/S Band Antenna	<ul style="list-style-type: none"> Broadband dipole antenna designed for military manpack or commercial mounted applications Operates: 698 - 2600 MHz, U-UHF, and L/S bands 4.5" gooseneck base bends up to 90° 	Weight: 0.29 lbs Size: 10.5" Connector: SMA	TW-870 TSM Ghost
	TW-1163 Body-Worn Antenna	<ul style="list-style-type: none"> Broadband dipole antenna with 36" cable, designed for body worn applications Operates in 698 - 2600 MHz, upper UHF, and L/S bands 	Weight: 0.29 lbs Size: 6" Connector: SMA	TW-870 TSM Ghost
	TW-1165 Tri-Band Antenna	<ul style="list-style-type: none"> -3.0 ~ +1.0 dBi TNC Tri-Band antenna Operates: 225 - 450 MHz, 1300 - 2600 MHz band 	Weight: 4.5 oz Size: 11" Connector: TNC	TW-875 TSM Ghost TW-900/950 TSM Shadow TW-860 TSM Spirit
	TW-1170 LUHF Vehicular Antenna	<ul style="list-style-type: none"> Rugged vehicular antenna for ground-based communications 	Size: 32" Weight: 4.90 lbs Connector: Type N Female Band: 225 - 450 MHz	TW-135 TSM Shadow HPR

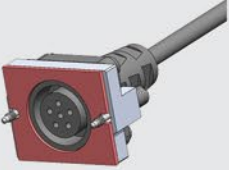

TSM Accessories				
Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Antennas				
	TW-1175 UHF, L, and S Vehicular Antenna	<ul style="list-style-type: none"> Rugged vehicular antenna for ground-based communications 	<p>Size: 28.5"</p> <p>Weight: 5.0 lbs</p> <p>Connector: Type N Female</p> <p>Band: 698-2600 MHz</p>	TW-135 TSM Shadow HPR
	TW-1180 Vehicular GPS Antenna	<ul style="list-style-type: none"> Rugged vehicular antenna for ground-based communications 	<p>Size: 28.5"</p> <p>Weight: 1.15 lbs</p> <p>Connector: SMA</p> <p>Band: GPS L1 Band, 1575.42 MHz</p>	TW-135 TSM Shadow HPR
	TW-1190 Dual-Band Vehicular Antenna	<ul style="list-style-type: none"> Rugged vehicular antenna for ground-based communications Fully "oak beam"-compliant Has a +2 dBi gain and is terminated in TNC 	<p>Weight: 5.0 lbs</p> <p>Size: 39"</p> <p>Connector: TNC</p> <p>Band: 1755-1815 MHz, 2200-2270 MHz</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow TW-870/875 TSM Ghost TW-860 TSM Spirit
	TW-1199 Handheld Antenna Kit	<ul style="list-style-type: none"> Mix of wideband and high gain, narrowband antennas provide operator flexibility Optimized performance Extended range 	<p>Weight: 1.8 lbs</p> <p>Size: 17.5" x 2.5"</p>	
Dongles				
	TW-1212 Ethernet Pigtail Dongle	<ul style="list-style-type: none"> Immersible, rugged dongle that provides 100BaseT Ethernet data connectivity Connects to the radio's multi-functional side connector and provides a 1 meter pigtail cable that terminates in an RJ-45 connector 	<p>Weight: 2.4 oz</p> <p>Cable Length: 1 M</p> <p>100 Mbps transfer rates</p> <p>Ethernet Patch Cable</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow

TSM Accessories

Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Dongles				
	TW-1230 USB Host Dongle	<ul style="list-style-type: none"> • Simultaneously charge a USB device and connect to the TSM network • Dongle supplies up to 500 mA to USB charging compliant devices 	<p>Weight: 1.2 oz</p> <p>Size: 2.48" x 0.90" x 0.62"</p> <p>Connector: USB Type-A</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1255 Ethernet Video Dongle	<ul style="list-style-type: none"> • Provides Nett Warrior Ethernet connection and BNC analog video input • Glenair Ethernet connector provides 500 mA @ 5 V • 2 M immersible with BNC cover and mating connector attached 	<p>Weight: 3.4 oz</p> <p>Size: 3.34" x 1.12" x 1.13"</p> <p>Connector: Nett Warrior Ethernet</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1265 USB 6-Pin Dongle	<ul style="list-style-type: none"> • Immersible pigtail dongle that provides USB 2.0 connectivity • 6-Pin Glenair connector compatible with rugged military equipment • 1 M cable connects to the radio's multi-functional side connector • Radio acts as host and provides 500mA charging current to compliant devices 	<p>Weight: 1.9 oz</p> <p>Length: 1 M</p> <p>USB 2.0 Compatible</p> <p>Connector: 6-Pin USB</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1710 Ethernet Pigtail Dongle	<ul style="list-style-type: none"> • Immersible, rugged dongle that provides 100BaseT Ethernet data connectivity • Connects to the radio's multi-functional side connector 	<p>Weight: 2.4 oz</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1712 Ethernet Pigtail Dongle	<ul style="list-style-type: none"> • Immersible, rugged dongle that provides 100BaseT Ethernet data connectivity • Connects to the radio's multi-functional side connector and provides a 1 meter pigtail cable that terminates in an RJ-45 connector 	<p>Weight: 2.4 oz</p> <p>Cable Length: 1 M</p> <p>100 Mbps transfer rates</p> <p>Ethernet Patch Cable</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow

TSM Accessories				
Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Dongles				
	TW-1725 HD Video Dongle	<ul style="list-style-type: none"> Provides a means to High Definition video Supports analog video input and all trigger functions (same as TW-1750 Multi-Sensor Dongle) ODU connector exposes necessary signals for analog video input and all trigger I/O functions 	<p>Weight: 1.7 oz</p> <p>Size: 3" x 0.90" x 0.79"</p> <p>Connectors: TW-1726 breakout cable and HDMI</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1726 HD Video Dongle	<ul style="list-style-type: none"> Intended for use with the TW-1725 HD Video Dongle The ODU plug on the cable mates with the ODU receptacle on the TW-1725 HD Video Dongle 	<p>Weight: 0.2 lbs</p> <p>Size: 21" Length</p>	1725 HDMI Dongle
	TW-1750 Multi-Sensor Dongle	<ul style="list-style-type: none"> Multi-Sensor dongle that provides a 100BaseT Ethernet, sensor connections, and control ports Hosts two 2.5 mm Trigger In ports to connect directly to sensors, a 2.5 mm Trigger Out port, a 2.5 mm Power Out port, and BNC for analog video input 	<p>Weight: 1.7 oz</p> <p>Size: 3.69" x 0.86" x 0.88"</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1760 Wi-Fi Dongle	<ul style="list-style-type: none"> Provides an 802.11b/g access point when installed on TW-950/900 or TW-135 Enables a connection between the TSM network and other devices such as smart phones or PDAs 	<p>Weight: 1.7 oz</p> <p>Size: 3.40" x 0.90" x 0.8"</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow

TSM Accessories





Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Power/Mount Adapters				
	TW-1301 HPR Power Pigtail	<ul style="list-style-type: none"> Screws onto the back of the TW-135 TSM Shadow HPR Provides flying leads for custom power integrations 	<p>Weight: 3.2 oz</p> <p>Extension Length: 3'</p>	TW-135 TSM Shadow HPR
	TW-1310 Battery Eliminator	<ul style="list-style-type: none"> With an output of 24V at 6.3 Amps, this sealed power supply allows full operation of the TW-135 TSM Shadow HPR. 	<p>Weight: 1.75 lbs</p> <p>Input Voltage: 85 - 264VAC; 100 - 240VAC Nominal, 50-60Hz</p> <p>Cable Length: 6'</p>	TW-135 TSM Shadow HPR








TSM Accessories







Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
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Power/Mount Adapters




	<p>TW-1390 Power Adapter</p>	<ul style="list-style-type: none"> Enables connection to external AC power Waterproof power supply with 3-prong plug Use with accessory TW-1400 and TW-1800 	<p>Weight: 0.75 lbs Voltage: 12 V DC, 30 W max output Cable Length: 77"</p>	<p>TW-900/950 TSM Shadow TW-870/875 TSM Ghost</p>
	<p>TW-1400 6-18 V Power Adapter</p>	<ul style="list-style-type: none"> Enables connection from handheld radios to external DC power for customizable power solutions Compatible with TW-1390, TW-1401, TW-1406, TW-1407, and TW-1408 	<p>Weight: 1.8 oz Input Voltage: 6-18 V DC Cable Length: 16.21"</p>	<p>TW-900/950 TSM Shadow</p>
	<p>TW-1401 Power Pigtail</p>	<ul style="list-style-type: none"> Supplies power from a remote power source Designed to connect to the TW-1400 Power Adapter; leads connect to DC power sources May be purchased separately Use with accessory TW-1400 and TW-1800 	<p>Weight: 2 oz Input Voltage: 6-18 V DC Cable Length: 2 M</p>	<p>TW-900/950 TSM Shadow</p>
	<p>TW-1402 High Capacity Battery Adapter</p>	<ul style="list-style-type: none"> Provides interface to high capacity Thales MBiTR and Harris batteries Includes dual bayonets for connectivity between the radio and battery Includes locking latches 	<p>Weight: 3.4 oz Size: 2.60" x 1.50" x 1.09" Input Voltage: 6-18 V DC Battery Life: Up to 20 hours</p>	<p>TW-900/950 TSM Shadow</p>

TSM Accessories






Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Power/Mount Adapters				
	TW-1406 BA-5590 Power Cable	<ul style="list-style-type: none"> Binder to BA-5590 Adapter Enables connection to external power Use with accessory TW-1400 and TW-1800 	<p>Weight: 0.20 lbs</p> <p>Extension Length: 78.74"</p>	<p>TW-900/950 TSM Shadow</p> <p>TW-870/875 TSM Ghost</p>
	TW-1407 Tajimi Binder Power Cable	<ul style="list-style-type: none"> Binder to Tajimi Enables connection to external power Use with accessory TW-1400 and TW-1800 	<p>Weight: 2.4 oz</p> <p>Input Voltage: 6–18 V DC</p> <p>Cable Length: 78.74"</p>	<p>TW-900/950 TSM Shadow</p> <p>TW-870/875 TSM Ghost</p>
	TW-1408 Glenair Binder Power Cable	<ul style="list-style-type: none"> Binder to Glenair adapter Enables connection from radio to a conformal battery Use with accessory TW-1400 and TW-1800 	<p>Weight: 0.05 lbs</p> <p>Input Voltage: 6–18 V DC</p> <p>Cable Length: 10"</p>	<p>TW-900/950 TSM Shadow</p> <p>TW-870/875 TSM Ghost</p>
	TW-1440 Remote Power Relay	<ul style="list-style-type: none"> Controls power to auxiliary devices from radio The relay is the connection between the auxiliary device and its power source Use with the Power Out port on the TW-1750 Multi-Sensor Dongle for remote power 	<p>Weight: 1.4 oz</p> <p>Size: 1.54" x 1.29" x 0.8"</p> <p>Input Voltage: 30–220 V DC @ 60 W, 0–30 V DC @ 2 AMPS</p>	<p>TW-900/950 TSM Shadow</p>
	TW-1450 32 Wh Rechargeable Battery	<ul style="list-style-type: none"> Includes bayonet connector to connect to the radio Connector locks into position with a latch Compatible with the TW-1460 Single Battery Charger and TW-1465 6-bay Battery Charger 	<p>Weight: 6.6 oz</p> <p>Size: 3.20" x 2.55" x 0.95"</p> <p>Battery: Lithium Ion</p>	<p>TW-900/950 TSM Shadow</p>

TSM Accessories				
Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Power/Mount Adapters				
	TW-1451 BB-2590 Battery	<ul style="list-style-type: none"> SmartCircuit Technology - Implements SMBus v1.1 smart battery technology Flexible output voltage State-of-Charge display 	Weight: 3.1 lbs Size: 4.40" x 2.40" x 5" Battery: Lithium Ion	TW-135 TSM Shadow HPR
	TW-1460 Single Battery Charger	<ul style="list-style-type: none"> Compact portable charger w/ DC power adapter for charging the TW-1450 32 Wh Rechargeable Battery Low profile, easy to store, and charges a battery to full charge within 4 hours 	Weight: 1.6 oz Size: 3.50" x 1.50" x 0.82"	TW-900/950 TSM Shadow
	TW-1461 UK Single Battery Charger	<ul style="list-style-type: none"> Compact portable charger w/ DC power adapter for charging the TW-1450 32 Wh Rechargeable Battery Low profile, easy to store, and charges a battery to full charge within 4 hours 	Weight: 1.6 oz Size: 3.50" x 1.50" x 0.82"	TW-900/950 TSM Shadow
	TW-1465 6-Bay Battery Charger	<ul style="list-style-type: none"> Designed as a desktop style battery charger for charging TW-1450 32 Wh Rechargeable Batteries Low profile, easy to store and operate, and charges a set of 6 batteries to full charge under 4 hours Includes a DC power adapter 	Weight: 31.6 oz Size: 16" x 4.88" x 3.25"	TW-900/950 TSM Shadow
	TW-1466 UK 6-Bay Battery Charger	<ul style="list-style-type: none"> Designed as a desktop style battery charger for charging TW-1450 32 Wh Rechargeable Batteries Low profile, easy to store and operate, and charges a set of 6 batteries to full charge under 4 hours Includes a DC power adapter 	Weight: 31.6 oz Size: 16" x 4.88" x 3.25"	
	TW-1491 UK Power Cord	<ul style="list-style-type: none"> The UK Power Cord is used to plug the charger into the wall for charging the TW-1450 32 Wh Rechargeable Battery 	Length: 2.5 Mt Plug Type: UK BS 1363A Connector Type: C13	TW-400 CUB TW-900/950 TSM Shadow






TSM Accessories

Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Power/Mount Adapters				
	TW-1800 Power Cable with Binder	<ul style="list-style-type: none"> 4-Pin mates to TSM Ghost power connector Allows TSM Ghost radios to mate to adapters: TW-1390, TW-1401, TW-1406, TW-1407, TW-1408 	Weight: 1.5 oz Length: 12" Connectors: ODU and Binder	TW-870/875 TSM Ghost
	TW-1801 Power Pigtail	<ul style="list-style-type: none"> 4-Pin mates to TSM Ghost power connector Custom terminate cable to interface of choice Allows radio to be powered from lab bench supply 	Weight: 1.5 oz Length: 40" Connector: ODU	TW-870/875 TSM Ghost
	TW-1805 Power Cable w/ USB A Connector	<ul style="list-style-type: none"> TSM Ghost power cable with USB A connector TSM Ghost radio can be powered by commercially available USB chargers 	Weight: 1.5 oz Length: 18" Connectors: 4-Pin ODU and USB-A	TW-875 TSM Ghost














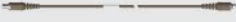

TSM Accessories				
Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Power/Mount Adapters				
	TW-1822 Power Adapter, TSM Spirit High Capacity Battery	<ul style="list-style-type: none"> • Adapter enables the use of high-capacity power sources with the TW-860 TSM Spirit radio • Adapter has a locking latch for secure battery engagement and easy battery replacement 	Weight: 3.4 oz Size: 2.60" x 1.50" x 1.09"	TW-860 TSM Spirit
	TW-1828 Power Adapter, DPP to NW Battery	<ul style="list-style-type: none"> • Allows the TSM Spirit radio to operate from any Nett Warrior compliant battery such as a Conformal or Land Warrior battery 	Weight: 1.6 oz Size: 24"	TW-860 TSM Spirit
	TW-1852 Adapter Cable, DPP to USB-C	<ul style="list-style-type: none"> • Power the TSM Spirit radio from a USB-C power pack • Connect power and data to a USB-C port on a hub for a soldier system • Connect power and data to a laptop for TSM Spirit radio programmin 	Weight: 1.5 oz Length: 74.80" Connectors: ODU A10WCM-P12XMM0-0000, USB-C male plug	TW-860 TSM Spirit
	TW-1853 DPP to USB-C Power and USB-A Data	<ul style="list-style-type: none"> • Power the TSM Spirit radio from a USB-C power pack while allowing simultaneous USB data access • USB-A Data allows commercial cabling to EUDs and laptops 	Size: 40"	TW-860 TSM Spirit
	TW-1854 Cable Adapter DPP to NWPAN	<ul style="list-style-type: none"> • Integrates the TSM Spirit radio with Nett Warrior compliant hubs, providing power to the radio and a data interface in a single cable • Compatible with Glenair STAR-PAN hubs 	Weight: 1.6 oz Size: 24"	TW-860 TSM Spirit








TSM Accessories				
Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Power/Mount Adapters				
	TW-2220 Battery Canister, HPR	<ul style="list-style-type: none"> Rugged aluminum canister creates a manpack system when used with the TW-135 TSM Shadow High Power Radio 	<p>Weight: 1.5 oz</p> <p>Length: 3" x 6.19" x 5.20"</p> <p>Battery: Compatible with BA-5590 and BB-2590 batteries</p> <p>Water Resistant: IP-67</p>	TW-135 TSM Shadow HPR
	TW-2225 Shock Mount, HPR	<ul style="list-style-type: none"> A Shock/Vibration Rack/Vehicle Mount for the TW-135 TSM Shadow HPR Can be used with the TW-135 radio alone or with the TW-2226 12VDC Adapter installed Can be installed on a SINCGARs shelf 	<p>Weight: 6 lbs</p> <p>Length: 12.54" x 6.90" x 5.43"</p>	TW-135 TSM Shadow HPR
	TW-2226 DC Adapter, HPR	<ul style="list-style-type: none"> DC adapter for the TW-135 TSM Shadow HPR Eliminates extensive and expensive battery replacement Conserves batteries for critical missions Integrates with TW-2225 Shock Mount 	<p>Weight: 2 lbs</p> <p>Length: 5.48" x 5.35" x 2.86"</p>	TW-135 TSM Shadow HPR
	TW-2400 Secure Wi-Fi Adapter	<ul style="list-style-type: none"> Wi-Fi access point that provides an L2TP/IPSec VPN over the Wi-Fi connection between your radio and EUD. Can also be operated with VPN disabled to act like a standard Wi-Fi access point. 	<p>Weight: 1.5 oz</p> <p>Length: 0.50" x 3.50" x 1.63"</p> <p>Water Resistant: IP-68</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow TW-870/875 TSM Ghost
	TW-2401 Programming Cable, Secure WiFi	<ul style="list-style-type: none"> Allows users to connect TW-2400 Secure Wi-Fi Adapter to their PC for configuration 	<p>Weight: 1.2 oz</p> <p>Size: 12"</p> <p>Connector: 6-Pin GlenAir USB Connector to USB Type-A</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow TW-870/875 TSM Ghost





TSM Accessories

Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Audio/Data Adapters				
	TW-1420 LEMO-To-3.5 MM Microphone Cable	<ul style="list-style-type: none"> Provides audio from a 3.5 mm microphone for sensing missions Not compatible with commercial 3.5 mm headsets For use with TW-225 and TW-400 radios 	Weight: 0.7 oz Size: 7.30" +/- .30" Connector: FGN.OF.305.CLC (LEMO) PRO SIGNAL MJ-064	TW-400 Cub
	TW-1430 LEMO-to-3.5 mm 3-Wire Headset Cable	<ul style="list-style-type: none"> Covert solution for PTT comms with the TW-225 or TW-400 radios Delivers crystal clear audio with a high-gain lapel mic Uses a 3.5 mm audio connector to use with any standard 3.5 mm headset 	Weight: 1.2 oz Size: 40+/-1" Connector: FGN.OF.305.CLC (LEMO) 3.5 mm AUDIO JACK	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1431 Single Wire Curl Headset	<ul style="list-style-type: none"> Covert solution for PTT comms with the TW-225, TW-400 or TW-900, TW-950 radios Delivers crystal clear audio with a high-gain lapel mic Uses a LEMO connector to use with any standard headset 	Weight: 0.1 oz Length: 48" Connector: FGN.OF.305.CLC (LEMO)	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1435 Audio Handset	<ul style="list-style-type: none"> Single Ch, single PTT 	Weight: 6.1 oz Length: 8.30" x 5.90" x 2.70" Connector: 6-Pin	TW-135 TSM Shadow HPR
	TW-1605 V Cable 6-Pin Audio and USB	<ul style="list-style-type: none"> Connects to top of radio for audio and USB Other capabilities include secure Wi-Fi and programming No side dongles are needed 	Weight: 3.5 oz Length: 8" Connector: 6-Pin	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1606 CBL ASM, 12 PIN TW-950, wEUD	<ul style="list-style-type: none"> Communications interface cable compatible for use with FalCom's range of multi-function control units (MFC) 	Weight: 1.45 oz Length: 35.43" Connector 01: Amphenol Terrapin 14-Pin Connector 02: ODU HD 12-Pin Connector 03: GLENAIR 6-PIN	TW-900/950 TSM Shadow

TSM Accessories				
Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Audio/Data Adapters				
	TW-1607 Audio Data Adapter, ADP to Atlantic Signal	<ul style="list-style-type: none"> Y cable connects to the Audio Data Port (ADP) on the TSM Shadow or TSM Shadow HPR radios Allows operation of the OTG USB with the Glenair connector and provides an interface to the Atlantic Signal Viper 2 PTT 	Weight: 1 oz Length: 30" Connectors: 12-Pin	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1608 COM Cable	<ul style="list-style-type: none"> Splitter cable for connecting an Invisio PTT control unit and an EUD/USB 2.0 to a TrellisWare TW-950 Shadow radio's ADP connector 	Weight: 3.5 oz Length: 31.50" Connector 01: CC01 Connector 02: 12 Pin ODU Connector 03: 6-Pin	TW-900/950 TSM Shadow
	TW-1610 V Cable 10-Pin Audio and USB	<ul style="list-style-type: none"> Connects to top of radio for audio and USB Other capabilities include secure Wi-Fi and programming No side dongles are needed 	Weight: 3.5 oz Length: 8" Connectors: 10-Pin	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1615 6-Pin Audio Adapter	<ul style="list-style-type: none"> ODU to 6-Pin audio connector 	Weight: 3.3 oz Length: 11" Connectors: 6-Pin	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1617 Audio Adapter, ADP to Atlantic Signal PTT	<ul style="list-style-type: none"> Audio cable for connecting TW-900/950/135 radios to an Atlantic Signal Viper Dual PTT control unit 	Weight: 1.0 oz Length: 11"	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1618 ADP to Invisio PTT Cable	<ul style="list-style-type: none"> Audio cable for connecting TW-900/950/135 radios to an Invisio V60 or V20 2PTT control unit 	Weight: 1.4 oz Length: 31.50"	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1620 10-Pin Audio Adapter	<ul style="list-style-type: none"> ODU to 10-Pin audio connector 	Weight: 3.2 oz Length: 11" Connectors: 10-Pin	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow

TSM Accessories




Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Audio/Data Adapters				
	TW-1625 STORM™ Speaker Microphone	<ul style="list-style-type: none"> Compatible with a variety of two-way radio models Omnidirectional microphone reduces ambient noises 	<p>Weight:</p> <p>Length: 3.04" x 2.43" x 1.13"</p> <p>Connectors: ODU 12-pin</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1635 Audio Adapter	<ul style="list-style-type: none"> ODU 12-Pin to LEMO 5-Pin connector Audio adapter allowing compatibility of audio accessories with TSM Shadow 	<p>Weight: .97 oz</p> <p>Length: 5.625"</p> <p>Connectors: ODU and LEMO (PHN.OF.305. XLM)</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow
	TW-1650 ADP to Ethernet Adapter	<ul style="list-style-type: none"> Provides 100 BaseT Ethernet data connectivity Connects to the Audio Data Port (ADP) on the radio and provides a female RJ 45 jack 	<p>Weight: 2.4 oz</p> <p>Length: 18"</p> <p>Connector: Ethernet Adapter</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow TW-870/875 TSM Ghost
	TW-1665 Glenair USB Adapter	<ul style="list-style-type: none"> Data only cable Allows operation of the OTG USB with Glenair USB connection Enables use of EUD 	<p>Weight: 1.6 oz</p> <p>Length: 24"</p> <p>Connectors: Glenair USB</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow TW-870/875 TSM Ghost
	TW-1670 USB Type-A Adapter	<ul style="list-style-type: none"> Connects to top of radio for USB, data, and programming ODU to USB-A Connector 	<p>Weight: 3.0 oz</p> <p>Length: 10"</p> <p>Connectors: USB-A</p>	TW-135 TSM Shadow HPR TW-900/950 TSM Shadow TW-870/875 TSM Ghost

TSM Accessories				
Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Audio/Data Adapters				
	TW-1685 Audio Adapter, HAP to 6-pin	<ul style="list-style-type: none"> This audio adapter has single talk group audio capability with a standard 6-pin audio connector 	Weight: 3.5 oz Length: 8" Connectors: 6-pin	TW-860 TSM Spirit
	TW-1686 Audio Adapter, HAP to Falcom PTT	<ul style="list-style-type: none"> Provide audio capability with 2 Talk Groups when used with Falcom PTT and headset 	Weight: 1.52 oz Length: 35.43" Connectors PTT: Amphenol Terrapin 14-Pin Plug Radio: ODU HD 9-Pin Plug	TW-860 TSM Spirit
	TW-1687 Audio Adapter, HAP to Atlantic Signal PTT	<ul style="list-style-type: none"> Provide audio capability with 2 Talk Groups when used with Atlantic Signal PTT and headset 	Weight: 1.0 oz Length: 30" Connectors PTT: ODU AMC, 14-pin plug Radio: Fischer, 9-pin plug	TW-860 TSM Spirit
	TW-1688 Audio Adapter, HAP to Invisio PTT	<ul style="list-style-type: none"> Provide audio capability with 2 Talk Groups when used with Invisio PTT and headset 	Weight: 1.4 oz Length: 31.50" Connector 1: CC01 Connector 2: 9-Pin Raymo	TW-860 TSM Spirit

TSM Accessories

Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Audio/Data Adapters				
	TW-2300 USB-A WiFi Adapter	<ul style="list-style-type: none"> Complies with draft IEEE 802.11g standard Features a hardware WPS (Wi-Fi Protected Setup) button for easy wireless connection 	<p>Weight: 0.11 oz</p> <p>Length: 0.61" x 2.60" x 0.90"</p> <p>Connectors: USB-A</p>	TW-860 TSM Spirit
	TW-2301 USB-A Ethernet Adapter	<ul style="list-style-type: none"> Connects your laptop to a TSM Spirit radio Supports true 10/100/1000 Mbps Ethernet network speeds for fast downloads 	<p>Weight: 0.96 oz</p> <p>Length: 1.57" x 0.62" x 0.27"</p> <p>Connectors: USB 3.0 A (Male) and RJ45 (Female)</p>	TW-860 TSM Spir
Audio Solutions				
	TW-3011 FalCom OTE2000 Headset	<ul style="list-style-type: none"> Left/right position interchangeable noise-canceling boom mic Headband, rail mount, and behind neck options available No onboard batteries/uses system power 	<p>Weight: 13.05 oz</p> <p>Length: 24"</p>	TW-900/950 TSM Shadow TW-860 TSM Spirit
	TW-3020 VIPER 2 PUSH-TO-TALK	<ul style="list-style-type: none"> Provides Dual Push-to-Talk, enabling Dual Talk Group capability Audio Mapping: Map audio channels to one or both ears Powered by the user's radio 	<p>Weight: 5.4 oz</p> <p>Length: 2.8" x 2.7" x 1.3"</p>	TW-900/950 TSM Shadow TW-860 TSM Spirit
	TW-3021 Atlantic Signal Headset	<ul style="list-style-type: none"> Shielded circuitry and wiring to help prevent cross-talk and RF/EMI interference Noise-canceling, ambidextrous boom microphone Environmental microphones for enhanced SA Seamless use with both single and dual comm push-to-talks 	<p>Weight: 1.5 lbs</p>	TW-900/950 TSM Shadow TW-860 TSM Spirit
	TW-3031 Invisio Audio Headset	<ul style="list-style-type: none"> Over-the-ear headset with hearing protection and full situational awareness when connected to an INVISIO Control Unit 	<p>Weight: 1.45 oz</p> <p>Length: 31.50"</p> <p>Connector 1: Invisio CC01</p> <p>Connector 2: 9-Pin (TrellisWare HAP)</p>	TW-900/950 TSM Shadow TW-860 TSM Spiri

TSM Accessories

Accessory	Catalog Number/Name	Description	Specifications	Compatible Radio
Miscellaneous Gear				
	TW-1505 Radio pouch	<ul style="list-style-type: none"> Easily attaches to MOLLE-webbed vests, rucksacks, belts, or packs Extremely durable, lightweight all-weather storage for TW-950/900 radios Side adapter remains accessible for connecting to radio interfaces Radio securely straps in with elastic buckles 	<p>Weight: 2.50 oz</p> <p>Length: 7.31" x 2.81" x 1.00"</p>	TW-900/950 TSM Shadow
	TW-1521 MOLLE Clip	<ul style="list-style-type: none"> Easily and securely attaches to MOLLE-webbed vests, rucksacks, belts, or packs Clip screws directly into the TSM Spirit radio Low profile clip allows access to all radio connectors and HMI 	<p>Weight: 0.08 oz</p> <p>Length: 3.19" x 1.28"</p>	TW-860 TSM Spirit
	TW-2210 In-line Amplifier	<ul style="list-style-type: none"> Dual-band, covers 1800 and 2200 MHz Slim profile for field vest pockets Extends network coverage for wearable and portable applications 	<p>Weight: 1.8 lbs (816.47 g) Stand-alone 1.95 lbs (884.51 g) With Power Cable</p> <p>Length: 7.5" x 3.50" x 1.00"</p>	TW-900/950 TSM Shadow



TrellisWare



HOME 1 . 71	↑ 2 ABC	MENU 3 DISP
← 4 GIB	ENT 5 JKL	→ 6 BNO
↶ 7 FQSB	↓ 8 TVV	ALT 9 WXYZ
CLR 0	↵ 1	MODE

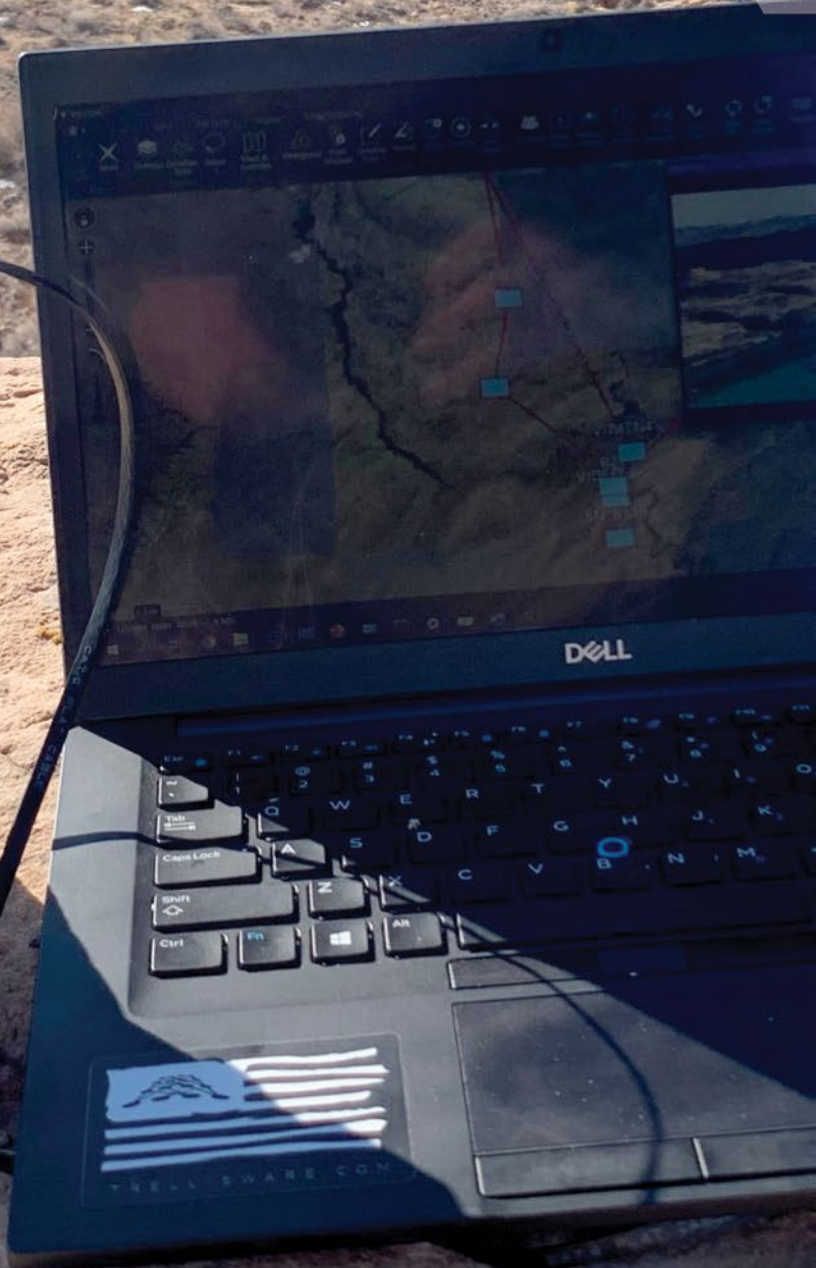
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TrellisWare
TW-1450 / V2 BATTERY
SCP0570117 32Wh
CAGE 1SBL7

WARNING
DO NOT DISCARD BATTERIES
IN FIRE OR WATER. RECHARGE
BATTERIES IN A WELL-VENTILATED
AREA. DO NOT RECHARGE BATTERIES
IN A PLASTIC BAG. DO NOT
DISPOSE OF BATTERIES IN A
FIRE. SEE INSTRUCTIONS FOR
DISPOSAL.

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DELL







TrellisWare
TECHNOLOGIES

When Nothing Else Works

J O I N T H E  _____
T R E L L I S // S P H E R E

For a complete set of documents, tips, tricks and helpful hints, visit the TrellisWare Customer Support Center at **support.trellisware.com**

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